

09/845,231

F0630/AMDP630US

REMARKS

Claims 1-5, 28, 29 and 35-37 are currently pending in the subject application and are presently under consideration. Claims 1, 28, and 35-37 have been amended herein. Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 1, 2, 4, 5, and 35-37 Under 35 U.S.C. §103(a)

Claims 1, 2, 4, 5 and 35-37 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Maguire *et al.* (US 6,038,525) in view of Robinson *et al.* (US 6,541,783). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Neither Maguire *et al.* nor Robinson *et al.* teach or suggest all the claim limitations of the subject claims.

To reject claims in an application under §103, an examiner must establish a *prima facie* case of obviousness. A *prima facie* case of obviousness is established by a showing of three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second there must be a reasonable expectation of success. *Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.* See MPEP §706.02(j). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art and not based on the Applicant's disclosure. See *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The claimed invention relates to a system and method to facilitate the monitoring of defects and impurities in thin films and controlling thin film deposition in semiconductor manufacturing. In particular, independent claims 1 and 35-37 recite similar limitations, namely a processor that *analyzes the deposited thin film by partitioning a conceptual mask into a plurality of grid blocks mapped on the wafer*. Maguire *et al.* and Robinson *et al.*, either alone or in combination, do not disclose or suggest such novel aspects of applicants' invention.

Maguire *et al.* relates to controlling a pulsed laser deposition process where a Raman spectroscopy is used to acquire data from a substrate as it is being coated with a film. More

09/845,231

F0630/AMDP630US

specifically, the cited reference shows a processor that analyzes the Raman spectroscopy data in order to determine the current thickness of the film. *See* col. 4, lines 39-41. However, instead of *partitioning a conceptual mask into a plurality of grid blocks mapped on the wafer*, as in the claimed invention, Maguire *et al.* is limited to applying the Raman spectroscopy to the substrate in a non-partitioned manner.

The Examiner attempts to use Robinson *et al.* to overcome the deficiencies of Maguire *et al.* Robinson *et al.* relates to a reticle incorporating scattering features for electron beam projection lithography. Specifically, Robinson *et al.* discloses *physically* etching a substrate from the side opposite the deposited or grown layers in sub-field areas to yield a desired membrane thickness between a grid of struts which enhance physical robustness of the reticle mask. *See* col. 11, lines 40-43. Thus, Robinson *et al.* discloses a *physical partitioning of a mask for etching*, but is silent regarding a processor to *conceptually partition a mask* into a plurality of grid blocks mapped on a wafer for the purpose of determining *deposition parameter adjustments for the one or more deposition components* based on data returned from the scatterometry system, as claimed.

In view of at least the foregoing, it is readily apparent that Maguire *et al.* and Robinson *et al.*, either alone or in combination, fail to teach or suggest all limitations of the subject claims. Accordingly, this rejection with respect to independent claims 1 and 35-37 (and the claims that depend therefrom) should be withdrawn.

II. Rejection of Claim 3 Under 35 U.S.C. §103(a)

Claim 3 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Maguire *et al.*, in view of Robinson *et al.* and further in view of Moslehi (US 5,270,222). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Claim 3 depends from independent claim 1, and as stated *supra*, Maguire *et al.* and Robinson *et al.* do not teach, disclose or suggest applicants' invention as recited in this independent claim; and Moslehi does not cure the aforementioned deficiencies of the primary references. Applicants' representative respectfully requests withdrawal of this rejection.

09/845,231

F0630/AMDP630US

III. Rejection of Claims 28 and 29 Under 35 U.S.C. §103(a)

Claims 28 and 29 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Maguire *et al.* in view of Gevelber *et al.* (US 6,162,488) and further in view of Robinson *et al.* It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Maguire *et al.*, Gevelber *et al.* and Robinson *et al.*, individually or in combination, do not teach or suggest each and every element set forth in the subject claims.

In particular, Gevelber *et al.* does not make up the aforementioned deficiencies of Maguire *et al.* and Robinson *et al.* with respect to independent claim 28. Gevelber *et al.* is directed towards utilizing linear control or non-linear predictive control that determines thin film deposition parameter adjustments. *See* col. 17, lines 59-62. However, the reference does not disclose or suggest that these methods of control are achieved by *partitioning the thin film into one or more conceptual grid blocks*, as is recited in claim 28.

In view of at least the foregoing, it is readily apparent that the cited references, either alone or combination, fail to teach or suggest all limitations of independent claim 28. Accordingly, this rejection with respect to claims 28 and 29 (which depends from claim 28) should be withdrawn.

09/845,231

F0630/AMDP630US

CONCLUSION

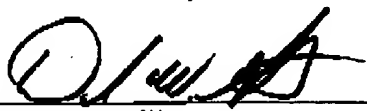
The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [AMDP630US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

AMIN & TUROCY, LLP



David W. Grillo
Reg. No. 52,970

AMIN & TUROCY, LLP
24TH Floor, National City Center
1900 E. 9TH Street
Cleveland, Ohio 44114
Telephone (216) 696-8730
Facsimile (216) 696-8731